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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,659	01/03/2007	Ugo Piero Bianchi	293168USX PCT	4513
22850	7590	07/12/2010		
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER WHEELER, THURMAN MICHAEL	
			ART UNIT 1619	PAPER NUMBER
			NOTIFICATION DATE 07/12/2010	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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jgardner@oblon.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/585,659	<b>Applicant(s)</b> BIANCHI ET AL.	
	<b>Examiner</b> Thurman Wheeler	<b>Art Unit</b> 1619	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-19 is/are pending in the application.
- 4a) Of the above claim(s) 10, 11 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 13, 15-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)         | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

DETAILED ACTION

Claims 1-11 and 13-19 are pending

1. In view of Applicants' amendments filed on 4/08/2010 directed to instant application the arguments regarding the previous rejections are moot in view of the new ground(s) of rejection. Any rejection not reiterated in this Office Action is withdrawn.

2. Claims 1, 2-5, 8-10, 13 and 14 have been amended. New claims 15-19 have added. Claim 12 has been canceled.

Claims 10-11 and 14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected Groups.

Herein claims 1-9, 13 and 15-19 are for further prosecution.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole

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would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining differences between the prior art and claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

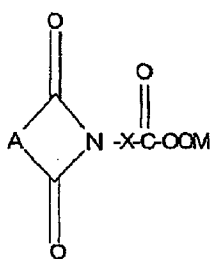
**Instant Claims 1-9, 13 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cavallotti et al (EP 0780374) in view of Barnes et al (EP0442549) and Reinhardt et al (USP 531324) as evidenced by Bianchi et al (WO 2004007452).**

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Applicants claimed invention is directed to a liquid formulation of imidoalkanepercarboxylic acids in the form of an aqueous dispersions comprising a nonionic surfactant.

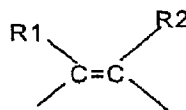
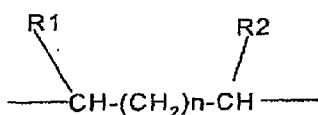
Cavallotti teaches an aqueous dispersion of imidoalkane percarboxylic acid in the beta crystal form as claimed (p.2, lns.42-60; all of p.3; p.4, lns.1-42) having a water content of 8-10% (p.5, lns.19-21). Chemical structures shown below (p.2, lns.42-58 to p.4, lns.1-21).

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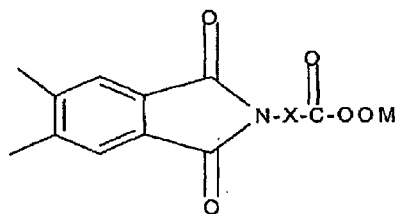
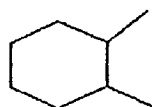
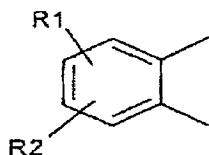


(I)

in which A indicates a group chosen from the following



or



n is an integer 0, 1 or 2,

R' is hydrogen, chlorine, bromine, alkyl C1-C20, alkenyl C2-C20, aryl or alkylaryl,

R2 is hydrogen, chlorine, bromine or a group of formula -S03M, -C02M, -C03M, -OS03M,

M indicates hydrogen, an alkaline metal or ammonium ion or the equivalent of an alkaline-earth metal ion and X indicates alkylene C1-C19 or arylene;

Y is = X and preferably an alkylene C3-C19;

Cavallotti teaches imidoalkane percarboxylic acid is phthalimido-peroxyhexanoic acid (p.2, line 41).

Cavallotti teaches an aqueous dispersion of imidoalkane percarboxylic acid can have a detergent additive such as a sequestering agent that includes hydroxycarboxylic acids, polyphonic acids and HEDP (p.5, lns.13-15). Cavallotti teaches aqueous dispersion of imidoalkane percarboxylic acid comprising eutectic composition (imidoalkane percarboxylic acid with water) has a viscosity at 75°C is 15 centiPoise (p.4, lns.49-52). Stability tests were performed for PAP at 75°C, 85°C and 90°C as shown in Tables 1 and 2 (see examples 8-9-10), wherein 0.6% of lost of active (peroxy) oxygen with sequestering agents, e.g. HEDP (p.5, lns.13-15; p.6, lns.11-12).

Cavallotti teaches the preparation of phthalimido-peroxyhexanoic acid (PAP) (see Examples 1-7 on page 5, lns.57-59) where a sequestering agent HEDF (see example 11-14 on page 6, lns.25-35) is added after the product has been formed. Further, Cavallotti teaches heating a suspension of imido-alkanpercarboxylic acid in water up to the complete solid melting and subsequent separation of the organic phase (eutectic phase comprising an aqueous dispersion of imidoalkanpercarboxylic acid and water) from the aqueous phase and recovery of the organic

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phase containing the imidoalkanpercarboxylic acid (p.2, lns.37-39).

As evidenced by Bianchi (WO 2004007452), imidoalkane percarboxylic acid are in an alpha crystalline form, stable at storage at the solid state, and when dispersed in water the alpha crystalline form is transformed into crystals of the beta crystalline form, stable in aqueous environment. The alpha crystalline form being characterized with respect to the known beta crystalline form of the prior art in that the respective spectra obtained by the X Ray Diffraction and the Surface Infrared Spectroscopy (IR/S) techniques show, with respect to those of the beta form of the same peracid, a different spectral image at X rays and a typical absorption shift in the 1697-1707  $\text{cm}^{-1}$  zone at IR/S towards higher frequencies, of the order of about 8-10  $\text{cm}^{-1}$  (page 8).

Barnes teaches imidoperoxydicarboxylic acids as an aqueous suspension comprising a nonionic surfactant and electrolyte as hereinbefore defined at a pH within the range of 1-6.5, preferably from 2-5, are extremely stable both physically and chemically (p.4, lns.38-40; p.5, lns.27-28). Barnes teaches particle size of the peroxy acids are from about 10 to 1,000 microns, preferably between 20 and 500 microns, optimally between 30 and 250 microns (p.5, lns.23-26).



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Barnes teaches nonionic surfactants that includes fatty acids, fatty alcohols, and alkoxyated derivations thereof. Further, within the alkoxyate category, ethylene oxide and/or propylene oxide condensation products of C<sub>8</sub>-C<sub>20</sub> linear or branched-chain aliphatic carboxylic acids, aliphatic alcohols and alkyl phenol (p.5, lns.30-39).

Barnes teaches aqueous liquid products encompassed by the invention will have a viscosity in the range of from about 50 to 20,000 centipoises (0.05 to 20 Pascal seconds) measured at a shear rate of 21 second<sup>-1</sup> at 25° C. In most cases, however, the products of the invention will have a viscosity of from about 0.2 to about 12 Pas, preferably between about 0.5 and 1.5 Pas (p.6, lns.47-50).

Reinhardt teaches suspending the imidoalkanepercarboxylic acids peracid in an electrolyte-free aqueous mixture of two different nonionic surfactants (col.2, lns.32-34). Reinhardt teaches storage-stable aqueous suspensions of organic peracids which contain 1 to 50% by weight of a surfactant mixture composed of 1 to 4 parts by weight of a C<sub>8</sub> -C<sub>22</sub> -fatty alcohol, ethoxylated with 1 to 5 units of ethylene oxide (col.2, lns.51-58). Reinhardt teaches that the content of the surfactants in the aqueous suspension is between 1 and 50%, preferably between

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2 and 30%, but in particular between 3 and 25% (col.3, lns.45-57).

Claim 2 is a product by process claim, such that the determination of patentability is based on imidoalkanepercarboxylic acids itself. The patentability of a product-by-process claim is determined based on the structure imparted to the product by the process steps. Thus, Cavallotti teaches imidoalkanepercarboxylic acids as described above. When there is no evidence to support or reason to believe that a patentably distinct structure is imparted by the process steps, the burden of proving otherwise falls to the applicant (See MPEP § 2113).

It would have been obvious to modify the aqueous dispersion of imidoalkane percarboxylic acids as taught by Cavallotti to increase the stability of the peroxy acid by adding a nonionic surfactant as taught by Barnes and Reinhardt. Further, Reinhardt teaches that 1% by weight of surfactant improves the stability of a liquid formulation comprising imidoalkane percarboxylic acids. Accordingly, one skilled in the art at the time of the invention would have been able to optimize the liquid formulation using a small amount of surfactant in accordance with routine experimentation. Further, one skilled in the art would have been motivated to do so in order to provide a simpler and more economical procedure for making a stable liquid

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formulation comprising imidoalkane percarboxylic acids and a nonionic surfactant. Thus, one skilled in the art at the time of the invention would have had a reasonable amount of expectation of success to provide a liquid formulation as claimed by Applicants' by following the teachings of Cavallotti, Barnes and Reinhardt, as a whole.

Accordingly, the claimed invention of instant claims 1-9, 13 and 15-19 were prima facie obvious to one skilled in the art at the time of the invention was made especially in the absence of evidence to the contrary.

### **Double Patenting**

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is

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shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

**Claims 1-9, and 13 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 7-11, 19 and 20 of copending Application No. 12039797.** Although the conflicting claims are not identical, they are not patentably distinct from each other because each are explicitly drawn to the beta crystal form of imidoalkanepercarboxylic acids. Instant application is directed to liquid formulations comprising imidoalkanepercarboxylic acids, whereas copending Application No. 12039797 is directed to a bleach or a disinfectant. However, imidoalkanepercarboxylic acids are the products of both instant application and copending application, and both are disinfectants.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

#### Conclusions

2. All claims are rejected.

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## Response to Applicants Arguments

3. Applicants argue that Cavallotti is directed to reducing water present in imidoalkanepercarboxylic acids. Applicants state that instant invention relates to an aqueous dispersion of an imidoalkanepercarboxylic acid with a nonionic surfactant in water. Applicants argue Cavallotti uses no surfactant, and for good reason: a surfactant would make it impossible for Cavallotti to separate his melted imidoalkanepercarboxylic acid phase from his water phase as no separation would occur - the surfactant would keep the melted imidoalkanepercarboxylic acid in solution with the water. Thus there is no reason one of ordinary skill in the art would modify Cavallotti by adding a nonionic surfactant as doing so would render Cavallotti unsatisfactory for its intended purpose and change the principle of operation of the reference.

Applicants argue Barnes teaches that the total surfactant amount present in his compositions should be "from 2 to 50% by weight" and in his Examples uses 2.25, 0.9, 1.0 and 1.5% of ethyloxylated alcohol surfactant, all of which are significantly higher than that presently claimed. In addition, Barnes equates, e.g. nonionic surfactants with anionic surfactants.

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Applicants' arguments filed 04/08/2010 have been fully considered but they are not persuasive.

Cavallotti teaches the preparation of imidoalkane percarboxylic acids in the presence of sequestering agents, such as hydroxycarboxylic acids, polyphonic acids and HEDP (p.5, lns.13-15). The eutectic composition contains about 11% by weight of water. Further, the nonionic surfactant can be added to the liquid formulation after the imidoalkane percarboxylic acids have been prepared and isolated by the procedure as taught by Cavallotti. Thus, Cavallotti's method of preparing imidoalkane percarboxylic acids does not have to be changed.

Barnes and Reinhardt teach nonionic surfactants can be added to a liquid formulation of imidoalkane percarboxylic acids to increase stability of the mixture. Preferred surfactants as taught by Barnes are ethyloxyated nonionic surfactants (page 6, line 12). Further, Reinhardt teaches 1% surfactant added to a liquid formulation improves stability of the imidoalkane percarboxylic acids. One of ordinary skill could determine that 0.005% - 0.3% added surfactant would increase the stability of the liquid formulation by routine experimentation. Further, one would be motivated to do so in order to provide a liquid formulation requiring a lesser amount of surfactant that would

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be more economical to prepare, especially on a large scale process.

Further, one skilled in the art would have recognized that imidoalkane percarboxylic acid after it was prepared could be mixed with a surfactant to increase the stability of the liquid formulation.

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

5. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thurman Wheeler whose telephone number is (571)270-1307. The examiner can normally be reached on Monday-Thursday, 7:30 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tracy Vivlemore/  
Primary Examiner, Art Unit 1635